

安徽泡果芥属 (十字花科) 一新种*

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A NEW SPECIES OF *HILLIELLA* (CRUCIFERAE) FROM ANHUI

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关键词 泡果芥属; 黟县泡果芥

黟县泡果芥 新种 图版 1: A

Hilliella yixianensis Y. H. Zhang, sp. nov.

H. paradoxa (Hance) Y. H. Zhang et H. W. Li ab specie nova recedit foliolis majoribus, pedicellis brevioribus c. 2 mm longis sub fructu 2—3 mm longis, sepalis navicularibus majoribus c. 2 mm longis 1 mm latis, petalis longioribus (2.8—3.3 mm longis), siliculis valvis irregularibus interdum praeditis.

Herba annua vel biennis. Caulis erectus, 40—90 cm altus, 2—3.5 mm crassus, striatus raro pilis simplicibus obsitus, vulgo glaber, nodis hispidulis. Folia basalia, caulina inferiora et mediana 5—7-foliolata; foliola membranacea vel subchartacea, terminalia longe elliptica vel ovato-lanceolata, 3—4 cm longa, 1—1.7 cm lata, apice acuminata, basi cuneata, margine obtuse dentata, dentibus apice emarginatis mucronatis, cum eis lateralibus et foliis caulinis superioribus subtus raro strigosa, supra rarissime strigosa, margine raro hispidula, petiolulis 4—15 mm longis; ea lateralibus ovata vel ovato-elliptica, 1—2.5 cm longa, 8—12 (—20) mm lata, apice acuminata vel acuta, basi late cuneata, cordata vel obliqua, petiolulis 1—5 mm longis; petioli 10—17 mm longi. Folia caulina superiora 3—5-foliolata; foliola terminalia oblongo-lanceolata, 8—30 mm longa, 3—10 mm lata, margine obtuse 2—4-dentata, petiolulis 1—3 mm longis; ea lateralibus ovata, 4—14 mm longa, 2—8 mm lata, margine undulate vel obtuse dentata, dentibus apice emarginatis mucronatis, petiolulis c. 1 mm longis vel nullis; petioli 3—12 mm longi. Racemi terminales et axillares, c. 4 cm longi, sub fructu 6—22 cm

longi, pedunculis 7—15 mm longis, siliculis 20—40, rachidibus fractiflexis. Pedicelli tenues, 2—3 mm longi, sub fructu 5—6 mm longi. Sepala elliptica, c. 1.5 mm longa, c. 0.5 mm lata. Petala alba, ovata, c. 2.5 mm longa, c. 1.5 mm lata, apice rotundato-obtusa, basi in unguiculum contracta. Stamina adscendentia. Ovarium obovoideum, c. 1.3 mm longum, ovulis 4, stylo c. 0.5 mm longo, sub fructu c. 1.5 mm longo. Siliculae ellipsoideo-obovoideae vel oblongae, c. 3.5 mm longae, 2—2.5 mm latae, valvis superficie pustulis densis praeditis in sicco rugosis; semina 1—3 per siliculam, depresso ovoidea, 1.5—2 mm longa, superficie dense minute tuberculata, russa, cotyledonibus incumbentibus.

Anhui (安徽): Yixian County (黟县), Hedongcun (河东村), roadside, alt. 250 m, 1991-07, seeds coll. S. X. Qian (钱士心); 1993-05-18, grown plant from Qian's seed coll. Y. H. Zhang (张渝华) 93012 (holotype, PE), and 1993-07-06, l. c. Y. H. Zhang (张渝华) 93016 (PE). Ibid. 1985-06-25, S. X. Qian (钱士心) 19003 (SRWMI*).

一或二年生草本,茎直立,高40—90 cm,粗2—3.5 mm,具棱槽,稀具单柔毛。节上多短硬毛。羽状复叶互生,基生叶及茎中下部叶具5—7小叶,小叶膜质或近纸质;顶生小叶长椭圆形或卵状披针形,长3—4 cm,宽1—1.7 cm,先端渐尖,基部楔形,边缘具钝齿,齿先端微凹,具小短尖头,连同侧生小叶及茎上部叶下面具稀疏短伏毛,上面具极稀短伏毛,叶缘具稀短硬毛,小叶柄长4—15 mm;侧生小叶卵形或卵状椭圆形,长1—2.5 cm,宽8—12 (—20) mm,先端渐尖或短尖,基部宽楔形、心形或歪斜,最下1—2对侧生小叶常于小叶柄一侧或基部生1小叶,小叶柄长1—5 mm;叶柄长10—17 mm。茎上部叶具3—5小叶,顶生小叶长圆状披针形,长8—30 mm,宽3—10 mm,边缘具2—4钝齿,小叶柄长1—3 mm;侧生小叶卵形,长4—14 mm,宽2—8 mm,边缘具波状齿或钝齿,齿先端具小短尖头,小叶柄长约1 mm或近无;叶柄长3—12 mm。总状花序顶生和腋生,长约4 cm,果期长6—22 cm;总花梗长7—15 mm,有短角果20—40;花序轴之字形曲折。花梗细,长2—3 mm,于果期长5—6 mm;萼片椭圆形,长约1.5 mm,宽约0.5 mm;花瓣白色,卵形,长约2.5 mm,宽约1.5 mm,先端圆钝,基部具短爪;雄蕊斜上;子房倒卵形,长约1.3 mm,有胚珠4颗,花柱长约0.5 mm,于果期长约1.5 mm。短角果椭圆状倒卵形或长圆形,长约3.5 mm,宽2—2.5 mm,表面密被小泡状突起,干时皱缩;种子1—3粒,扁卵形,长1.5—2 mm,表面密被小瘤状突起,红褐色,子叶背倚。

本种以花序轴之字形曲折,花序茂密在泡果芥属中极易识别。本种与奇异泡果芥 *H. paradoxa* 的区别在于后者小叶较大,花梗长约2 mm,于果期长2—3 mm,较粗短(图版1: 2A),萼片呈囊舟状(图版1: 2B),长2 mm,宽约1 mm,花瓣长2.8—3.3 mm,宽约1 mm,基部渐狭成柄,柄长约1 mm,果实倒卵圆形,果瓣常不对称或凹凸不平。

从 Oliver (1879) 所绘奇异泡果芥图 (in Hook. Icom. Pl. 13: 66. t. 1285) 看,果序轴有直伸和扭曲两型,为弄清黟县泡果芥和奇异泡果芥果序轴的异同,进一步做了一些工作。查阅 Oliver (1889) 所绘奇异泡果芥另一图 (in Hook. Icon. Pl. 19: t. 1818),

果序轴均直伸,说明果序轴扭曲不是后者的固有特征。观察采自四川的该种植物标本(吴世福 9221, ZJMA),并用种子作栽培观察,所见植株的果序轴均直伸。但是在广泛查阅标本时也曾发现个别标本的果序轴存在扭曲状态,如熊洛华 3226 (PE),不过这种扭曲呈不规则状态,和黟县泡果芥的果序轴全部呈规则的之字形曲折不同。

细胞学试验结果,两者体细胞染色体数目相同, $2n=42^*$ 。过氧化物酶同工酶的聚丙烯酰胺凝胶电泳试验结果表明,两者酶谱差异明显(图版 1: 3)。两者均有 9 个显色条带,但仅 2 个条带 Rf 值相同,而强度仍有差异。显然,形态和实验结果已能说明黟县泡果芥和奇异泡果芥是不同种植物。

图版说明 Explanation of Plate

图版 1 1. 黟县泡果芥 A. 模式标本; B. 花、果、种子解剖 a. 花瓣, b. 萼片, c. 花, d. 雄蕊, e. 胚, f. 种子, g. 果瓣; C. 花序轴一部分示果序轴之字形曲折, 果梗细长。2. 奇异泡果芥 A. 花序轴一部分, 示果序轴直伸, 果梗短粗; B. 花瓣和萼片。 3. 黟县泡果芥 (HYI) 和奇异泡果芥 (HPA) 的过氧化物酶同工酶酶谱。

Plate 1 1. *Hilliella yixianensis* Y. H. Zhang A. Specimen of type; B. Anatomy of flower, fruit and seed; a. petal, b. sepal, c. flower, d. stamen, e. embryo, f. seed, g. valve; C. Part of raceme, showing the inflective rachis and slender pedicel. 2. *H. paradoxa* (Hance) Y. H. Zhang et H. W. Li A. Part of raceme, showing the straight rachis and short and thick pedicel; B. Petal and sepal. 3. Zymogram of peroxidases of *H. yixianensis* (HYI) and *H. paradoxa* (HPA).

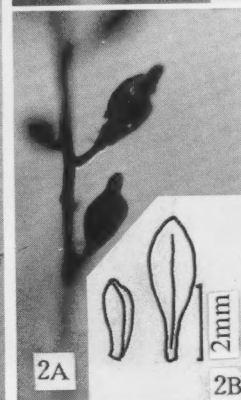
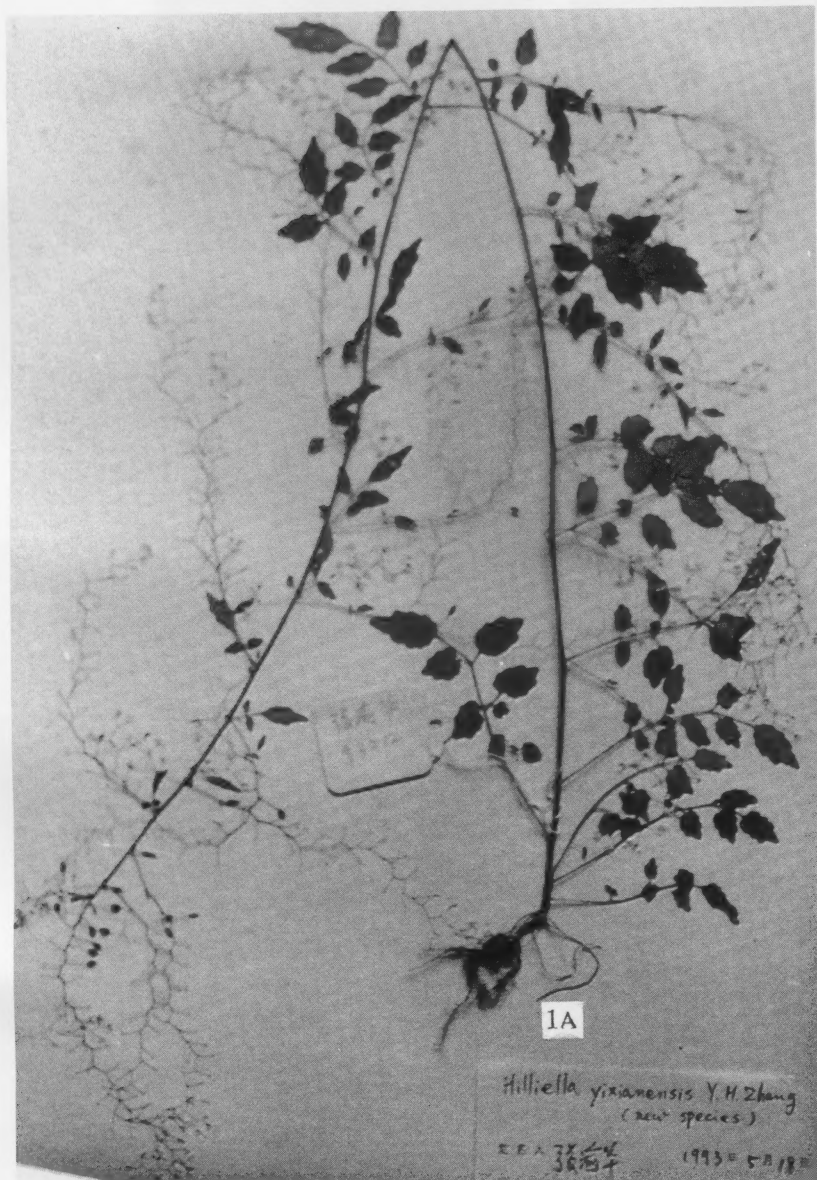
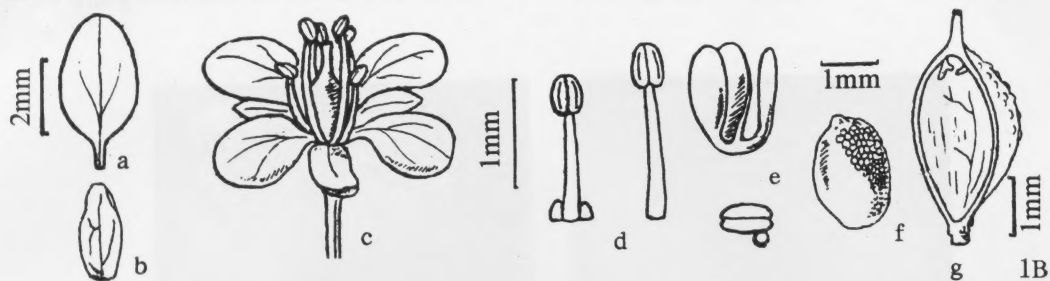
* 照片将在另文发表。

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Zhang Yu-hua: A New Species of *Hilliella* (Cruciferae) from Anhui

图版 1

Plate 1



HYI

HPA

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see explanation at the end of text